NORTH AMERICAN TECHNOLOGY AND INDUSTRIAL BASE ORGANIZATION

NATIBO

Operations & 3 Year Business Plan



Revision: May 2007

... A Forum for Cooperation

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Report Documentation Page

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Background

- Organization
- NATIBO Products & Services
 - Memorandum of Understanding
 - Studies & Assessments
 - Advocacy Activities
- Work Plans
- Summary





- Joint Canadian DND US DoD organization
- Based on 1985 "Shamrock Summit" pledge by President Reagan and Prime Minister Mulroney
- 1987 NATIBO Charter with 1994, 1997 revisions
 - "promote...and...execute...DoD and DND technology and industrial base programs and policies"
 - "foster cooperation...in development of coordinated technology and IB policies...that promote the integration of the defense and commercial industrial sector"
 - "ensure that North American technology and IB considerations are taken into account during US or Canadian *military or civilian* planning emergencies



Mission

In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense **Departments**



Background

- NATIB Memorandum of Understanding (MOU) signed May 2001
- Covers NATIBO Activities
 - Coordination of technology & industrial base activities
 - Development and evaluation of demonstrators/prototypes
 - Integration of defense & commercial industrial sectors
 - Technology insertion and industrial base data projects
 - Studies/Assessments
- Facilitates Information Exchange, Working Groups and Project Arrangements
- MOU allows assignment of Cooperative Project Personnel and contracting on behalf of the other nation



Organization Steering Committee

Appointment

- "Each Participant in the NATIBO MOU will appoint its national Steering Committee (SC) Co-Chair"
- "Each Participant (through its MOU Co-Chair) will select members of the NATIBO MOU SC"

Responsibilities

- Meet no less than annually
- Approval authority for Working Groups and Project Arrangements under the NATIBO MOU
- Advocacy and education
- Developing MOU processes, monitoring their effectiveness and recommending/implementing improvements

Resources

- Personnel are assigned (no dedicated support)
- No budgeted funding line in place (funding provided by participants on a project-by-project basis



Organization Steering Committee - Principals

Canada



Co-Chair: DND (DG International & Industry Programs)

U.S.



Co-Chair: USD(AT&L), Office of Technology Transition

Army

Navy

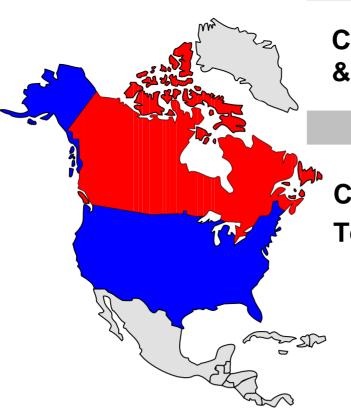
Air Force

Marine Corps

Missile Defense Agency

Defense Logistics Agency

DCMA





Organization Steering Committee - Observers

Canada



- DND: Canadian Defense Liaison Staff (Washington) and Director Industry Relations, Analysis and Policy/DGIIP
- Technology Partnership Canada
- Industry Canada
- Canadian Commercial Corp.

U.S.



- DHS
- Department of Commerce
- USD(AT&L), International Cooperation



Organization Secretariat

Appointment

- Selected by both Participants in support of the NATIBO MOU
- US ECBC has been NATIBO Secretariat since 1987
- Secretariat is currently staffed by DoD (jointly funded by Services and DND)

Responsibilities

- Maintain all NATIBO related documentation and correspondence
- MOU details Secretariat responsibilities including keeping an inventory of all project background and foreground information exchanged between the participants



Organization

Business Development Working Group (BDWG)

- NATIBO Steering Committee created BDWG to:
 - Identify areas for collaborative activities
 - Promote and facilitate the use of the MOU for executing collaborative project arrangements
 - Assist potential users in developing and staffing the documents necessary to initiate an international project arrangement
- BDWG Points of Contact:

US Army

US Navy

US Air Force

- USMC

- OSD

– DND

rock-ecbc-natibo@army.mil

onrmantech@onr.navy.mil

natibo@af.mil

natibo@usmc.mil

natibo@osd.mil

Dundas.sw@forces.gc.ca



Information Exchange

- Includes reports, data bases
- WGs must submit list of exchanged documents to Secretariat on annual basis

Controlled/Classified

- Controlled Unclassified: Must be marked. Limited to Project Information use only.
- Classified: Up to SECRET. Must comply with Department Guidelines and Procedures



Working Groups

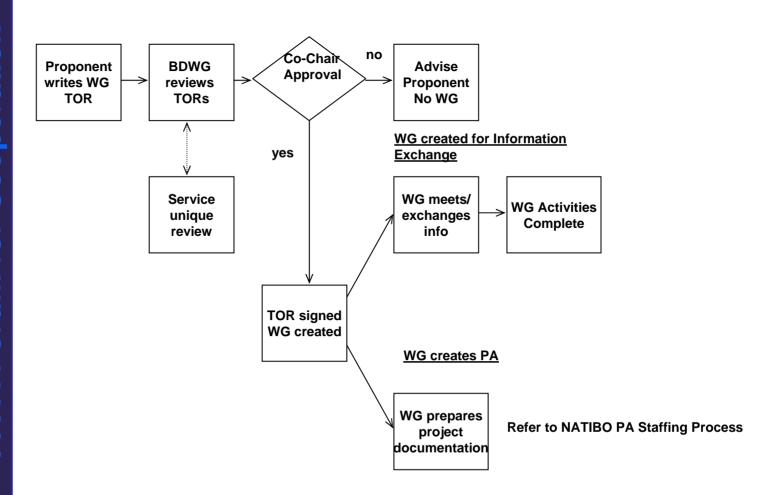
- "Sub-committees and WGs, ... may be established by the SC with concurrence of the participants. They will be established to address specific areas of concern and propose courses of action to the SC for assigned tasks"
- Require approved Terms of Reference (TOR)
- Provide annual status to Steering Committee

Terms of Reference:

- Defines intent to work under the NATIBO MOU
- Formally establishes a Working Group
- Identifies who is involved
- Provides a scope of activity
- Outlines any specific responsibilities
- Obtains Co-Chair approval for the effort
- Format and example available on NATIBO Website



Overall NATIBO TOR Approval Process





Current Working Groups & Date Established

♦	Lig	ht .	Arr	nor	'ed	Vel	nicle
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Fuel Cell

Gas Turbine Engine IBA

First Responder Technology

Soldier System Technology

Future Fire Control Systems

Med Support Vehicle System

 Tactical Communication & Info Systems Modeling

Homeland Defense

Critical Infrastructure Protection

* TOR concluded, term expired

July 2001

Oct 2001

July 2002*

Dec 2002*

Jan 2003

Jan 2003

Mar 2003

Apr 2004*

Apr 2005

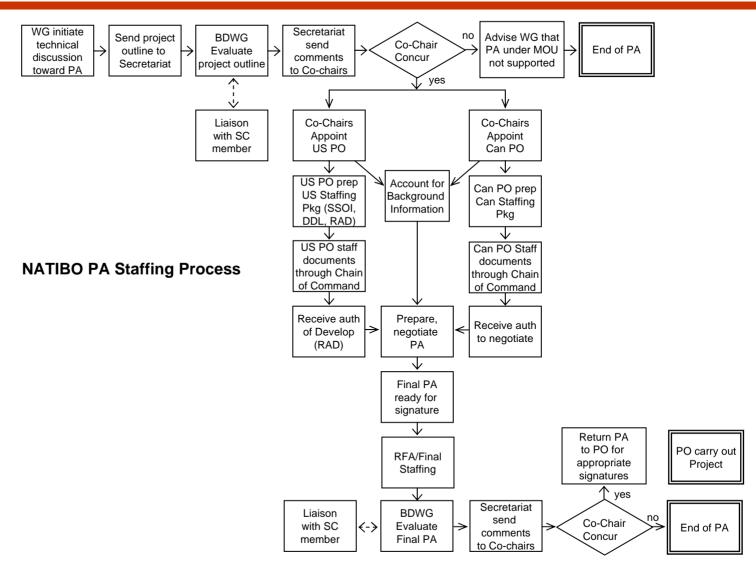
Jan 2006



Project Arrangements

- "Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects"
- Historically funded by mutually acceptable amounts from Services and DND
- "Each Participant will bear its equitable share of the total estimated cost of each NATIB PA and will receive an equitable share of the results, in accordance with the provisions of this MOU and the applicable NATIB PA."
 - Equitability is evaluated on a case-by-case basis
 - Equitability issues are part of the project/PA negotiation process







History

- Conceptual framework for "Technology Base Enhancement Program" initiated in 1991
- Program formalized in 1992
- Joint investment thru FY05, approx. \$10M

Scope

- Survey North American technology and industrial base capabilities
- Analyze technology maturity and to what extent it has transitioned to a production environment
- Identify future trends/problems
- Develop roadmaps of strategic initiatives (both investment and non-investment)

Process

- Originated by NATIBO (usually by BDWG)
- Sponsored by NATIBO (may require establishing a Working Group)



Considerations for Selection:

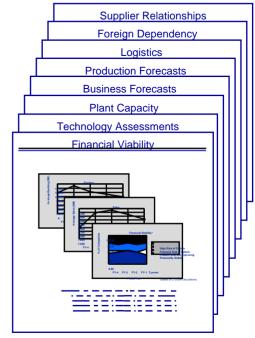
- Critical to defense requirements
- Pervasive use by Services and Canadian Forces
- Commercial leverage ("Dual-use")
- Status of technology vis-à-vis international competition
- Force multiplier
- Need for government action
- Affordability of the technology
- High potential payback from minimum resources



investment/non-investment Roadmaps

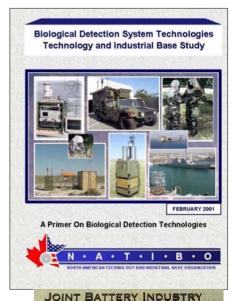
Defined Process leads to Reports

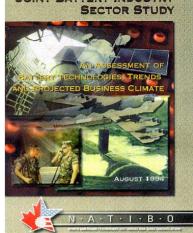
Define Team: Lead Organization, members, technical expertise Prepare/Define Technology and/or **Product Structure Identify Potential Sources** Select Potential Sources for On-site **Visits** Conduct On-site Interviews and technology/industry Reviews Analyze Data: Synthesize findings, conclusion, and recommendations Prepare Technology Base Report w/





- 1993 Metal Matrix Composites Study
- 1994 Battery Industry Study
- 1996 Collaborative Virtual Prototyping Study
- 1996 Ion Beam Processing Study
- 1998 Corrosion Detection Technologies Study
- 1999 Rechargeable Battery Study
- 2001 Biological Detection Systems Technology Study
- 2001 Collaborative Opportunities in DMSMS
- 2003 Small Gas Turbine Engine Study
- 2004 First Responder Technologies Study
- 2006 Fuel Cells for LAV Application
- 2006 Cooperative Homeland Defense and Equipment for First Responders
- 2006 Active Protection Systems Collaborative Point Paper (CPP)
- 2007 Border Surveillance CPP







Streamlined Processes

- Goal: Improve responsiveness and relevance of technology and industrial base studies by reducing lead times from historical 18 months to less than 12
- More frequent use of organic (government) resources,
 e.g., DMSMS and First Responder studies
- Increased NATIBO sponsoring of proposed Joint Studies, e.g., Small GTE and Battery efforts
- Adopt "Collaborative Point Paper" concept

Resources

- Provided by participants
- Can include funding, manpower, or information



- Goal: JUMP-START POTENTIAL COLLABORATION IN TARGETED AREAS
- Develop quick turn around product to:
 - Highlight an area of interest to the NATIBO SCM
 - Prepare short assessment of capabilities/technologies in government and industry in the US and Canada
 - Highlight value of using NATIB MOU as mechanism to initiate collaboration
 - Identify and create awareness within weapon system/technology management communities across DoD and DND
- Resource Requirements
 - 6-8 week schedule (start to finish)
 - Leverage existing resources (information & personnel) of BDWG member organizations



- Web site is primary communication media available to Co-Chairs
- Maintained by DUSD(AT&L)
- Completed Web site enhancements:
 - Reference sections on topics such as information exchange, NATIBO process charts
 - Links to OSD and Service International Program Offices (see next chart)
 - Highlight policies and procedures relevant to use of MOU
 - Knowledgeable points of contact
 - User's Group Area to post comments/testimonials
 - Information on other US/Canada Agreements and what's best to use when
- Developing additional boilerplates (e.g., TOR for information exchange)



New Look in 2006 & new address www.acq.osd.mil/ott/natibo

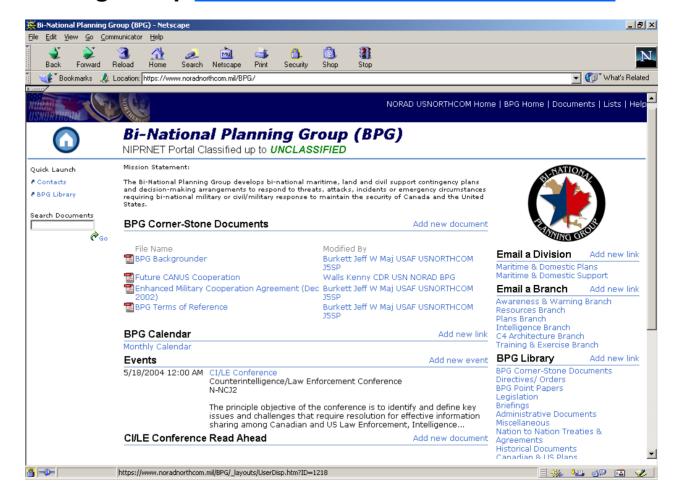




- Key Organizations/Sites (not inclusive)
 - DGIIP, Directorate of Continental Materiel Cooperation (www.forces.gc.ca/admmat/dgiip/dcmc)
 - International Cooperation, OUSD(AT&L) (www.acq.osd.mil/ic/)
 - Defense Security Cooperation Agency (<u>www.dsca.osd.mil</u>)
 - Defense Threat Reduction Agency (www.dtra.mil)
 - US Army Defense Exports and Cooperation (https://usasa.army.mil/DASA_DEC)
 - US Army Security Assistance Command (www.usasac.army.mil)
 - Naval Inventory Control Point, International Programs (www.navicp.navy.mil/of/ofhome)
 - Air Force Security Assistance Center (https://rock.afsac.wpafb.af.mil)
 - Deputy Under Secretary of the Air Force, International Affairs (www.safia.hq.af.mil)
 - Canadian Forces (<u>www.airforce.forces.gc.ca</u> , <u>www.army.forces.gc.ca</u> , <u>www.navy.forces.gc.ca</u>)



 Develop links between NATIBO site and Bi-National Planning Group https://www.noradnorthcom.mil/BPG





Decision Matrix

- Highlight "Best Vehicle" for cooperative activities
- Provide background (possible web site links) on each

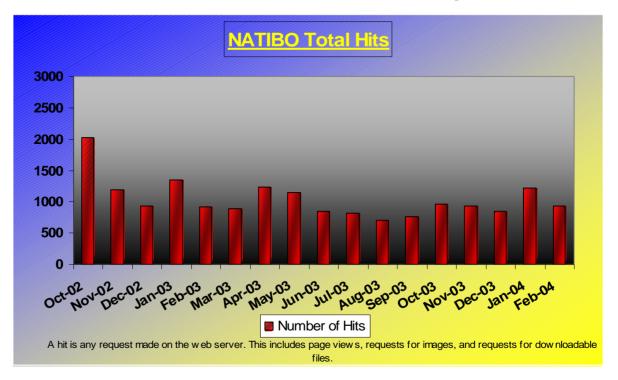
	Bilateral Defense Cooperation Tools									
Responsibility of	Science and Technology Establishments O				Operational/I	nal/Engineering/Materiel Establishments				
Activity Program/Agreement	Technical Research and Development Program	Technology Demonstration Program	Defence Industrial Research Program	Multilateral Master Information Exchange Agreement * **	The Technical Cooperation Program*	CANUSTEP	NATIBO	MDEAs **	Specific MoUs	DoD Acquisition Framework
Basic Science	riogram		rrogram	rigicomeni						Tramowork
Applied Science										
Operational Requirements										
Concept of Operations										Concept Refinement
Project Documentation										
Engineering Development										Technology Development
Proof of Concept/Demonstration										System Development and Demonstration
Production and Deployment										Production and Deployment
Test and Evaluation										0
Sustainment and Maintenance										Operations and Support
Commercial Applications										
Industrial Base				_						

^{*} Agreement includes also UK, AU, NZ

^{**} Primarily used by the respective Navies



- RDT&E Infrastructure Information
 - Usage has been declining
 - Looking at integrating WVa HighTech Consortium Effort (www.navytechmatch.com)
 - Will transition to TechMatch as site is updated





NATIBO Conference Display

- Continue attendance at the Defense Manufacturing Conference (DMC) but update display to highlight what the MOU can do for that particular community
 - Update Completed
 - Presented at DMC 2006 in Nashville
 - Planning to display at DMC 2007 in Las Vegas
- Return to a few of the large Service related conferences that are heavily attended by Program Mgrs
- Develop short promotional tool for desktop presentation



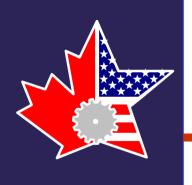
Other Mechanisms

- DAU presentations (S&T Managers Course), updating as appropriate
- Target specific population (Project Directors and Equipment Project Managers)
- Foreign Liaison Officers (FLOs)
 - Knowledgeable assets already in-place with access to broad customer community
 - Current use of FLOs still ad-hoc, some members leverage more than others
 - Maintaining consolidated US and CA FLOs directory (place on updated web site)



3 Year Plan Milestone Schedule

Activity	CY2005	CY2006	CY2007
Steering Committee Mtgs	Victoria, B.C.	San Diego, CA	Quebec City, QC
Advocacy Plan	Web-Site U	Seminar Initiative	
Potential Areas for DND/DOD Cooperation on Homeland Defense			
First Responder access to Military Equipment (Benefits & Challenges)			
Critical Infrastructure Protection (CIP)			
MOU Revision			TBD
Collaborative Point Papers (Active Protection & Border Surveillance)		Active Protection Systems	Border Surveillance Technology
•			
Fuel Cells		For LAV	Industry IBA



Work Plans #1 Advocacy Plan

Requirement

- Generate interest among program managers and project engineers in using the NATIB MOU for collaborative efforts
- Provide "How To" Information to potential MOU Customers

Expected End Item

- Upgraded Web-Site (Completed)
 - Expanded Information on leveraging NATIBO products
 - Improved MOU tools & instructions
 - Relevant links to DoD and DND International Program Offices
- Seminar Program for DoD/DND International Program Officers
 - Develop Curriculum
 - Identify Audience & Locations Want to educate the "gate keepers" that advise program managers on establishing international efforts

Resources

- DTIC and DUSD(AT&L) supported Web-Site changes
- BDWG initiate Seminar effort

- Web-Site Redesign: June 2005 to Dec 2005, Launched Feb 2006
- Schedule first Seminar: May 2007



#2 Potential Areas for DND/DoD Cooperation on Homeland Defense

Requirement

- Review Cooperative Homeland Defense Initiatives
- Focus on Technology, Acquisition and Logistics efforts (excludes CBRNE and Major Weapon Systems)
- Tied to DoD/DND roles in Civil Support and Aid to Civil Power
- Identify Gaps and Develop Recommendations

Expected End Item

- Presentation outlining process and findings
- Action Plans for Recommendations

Resources

- DND: DGIIP & ADCA
- DoD: ASD(HD), AF & Army

- Develop TOR for HD Working Group (signed April 2005)
- Jan 2005: Kick-Off Study
- Jun 2005: Brief Preliminary Findings at SCM
- May 2006: Release Final Report





#3 First Responder Access to Military Equipment

Requirement

- Identify military equipment of use to First Responders in various emergencies
- Assess current availability and location of identified equipment
- Identify constraints/barriers to issue and movement of equipment (both domestically and cross-border)

Expected End Item

- Presentation outlining process and findings
- Detailed Report
- Recommendations with Action Plans

Resources

- DND: DGIIP and ADCA
- DoD: ASD(HD), AF & Army

- Jan 2005: Develop Resource Strategy
- Jun 2005: Brief Preliminary Findings at SCM
- May 2006: Release Final Report





#4 Critical Infrastructure Protection (CIP)

Requirement

- Identify critical components of the Defense Industrial Base in both the US and Canada
- Conduct Vulnerability Analyses at selected sites

Expected End Item

- Presentation outlining process and findings
- Detailed Report
- Recommendations with Action Plans

Resources

- DND: DGIIP and ADCA
- DoD: ASD(HD), OUSD (AT&L), DCMA, AF & Army

- Dec 2005: Develop Resource Strategy
- Jun 2006: Brief Preliminary Findings at SCM
- May 2007: Release Final Report



Work Plans #5 MOU Revision/Amendment

Requirement

- Review the NATIBO MOU for Amendment
- Include U.S. export control-related language, once finalized
- Add other improvements as required (e.g. Project Equipment Transfer (PET))

Expected End Item

 Revised MOU with new export control-related language and other improvements once final export control text is agreed to

Resources

– DND: DGIIP

DoD: OUSD(AT&L)

- August 2005: Establish Ad Hoc MOU Review Group
- Jun 2006: Provide MOU Review Group feedback at next SCM
- 2007: Negotiate MOU Amendment and Finalize Changes



#6 Collaborative Point Papers Active Protection & Border Surveillance Technology

Requirement

- Identify Technology/Industrial Base areas of interest to both DoD and DND
- Rapidly assess government and commercial capabilities
- Distribute assessment to key stakeholders with information on NATIBO to promote collaborative projects

Expected End Item

- Collaborative Point Paper
- Customer(s): Canada COM, USNORTHCOM, OSD(AT&L), Services, DHS

Resources

- DoD: Service & Agency Industrial Base Data & Information
- DND: DGIIP

- 2nd Qtr CY 2006: Developed CPP Template
- Sep-Oct06: Performed assessment of Active Protection Systems based on discussions at Jun06 SCM, distributed CPP
- Mar-May07: Performed assessment of Border Surveillance Technology



Work Plans #7 Fuel Cells

Requirement

- Increased Military Importance of Fuel Cells
- Evaluate capabilities of the North American Industrial Base for Fuel Cells. The focus will include Mobile Power Applications. The Study will identify what's available in both commercial and military markets and include technology and production capabilities. The scope will encompass vehicle applications including Silent Watch, Auxiliary Power Units, On-Board Vehicle Power, Propulsion, Specialty Vehicles (forklifts, etc.) and automobiles/buses/trucks.

Expected End Item

- Production capability, capacity, TRL and MRL assessment of North American Companies
- Customer (s): OSD, DND, Services

Resources

- DoD/DND: DCMA IAC & DGIIP
- Advisors : ODUSD AS&C (OTT), DUSD/IP & JDMTP Power Sources TWG

Potential Customers

- Customer(s): OSD, DND, Services

Technologies of Interest

PEM, Solid Oxide and other type Fuel Cells, JP-8 Fuel Reformers

- 1st 2nd Qtr CY 2006: Analyzed Hydrogenic's capabilities/TARDEC rqts., developed and submitted final report - Completed
- 1st Qtr CY 2007: Initiated planning for industry survey of North American Companies
- 4th Qtr CY 2007: perform site visits, draft Phase II report Complete draft Industrial Base study, finalize report



Work Plans #8 Robotics

Requirement

- Increased Military use of Robotics (land, air and sea applications)
- Joint Service, DND interest
- Technology and Industrial base activities in both countries

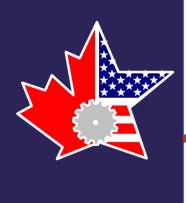
Expected End Item

- Identification of collaborative development and industrial partnering
- Customer(s): OSD, DND, Services

Resources

- DoD: DCMA IAC, ODUSD AS&C OTT, SPAWAR
- DND: DGIIP, DRDC

- 3rd Qtr CY 2007: Prepare ToR and establish Working Group
- 3rd Qtr CY 2007: Develop study plan, Initiate assessment
- Complete study: TBD



Measures of Success

Memorandum of Understanding

- Number of Working Groups/TORs in Place
- Number of NATIB PAs Executed/\$ associated with Pas
- Number of PAs on other vehicles initiated by NATIB Working Groups
- Approval Cycle Times
- Number of projects successfully taken to completion
- New Project Starts
- Benefits to Government/Industry

Studies & Assessments

- Time to Initiate and Complete
- Number of recommendations acted on
- Number of new studies/assessments initiated
- Benefits to Government/Industry

Advocacy

- Web Site Activity
- Attendance at Display

*Blue font denotes information all ready collected



Summary

- Proposed Business Plan represents an incremental approach to increasing NATIBO visibility in DoD and DND
- Business Plan reflects small to moderate increase in resources
- Emphasizes a focus on North American Security/Defense
- Overall Goal is for NATIBO to provide increased value to the defense of both countries